outwardly projecting flange 180 extends around an open front edge of liner 108 Flange 180 seats against cabinet front faces 162, 164, 166 when liner 102 is inserted into case 106. A dividing wall or mullion 182 is mounted in liner 108 in alignment with indented portions 184 of liner side walls 172, 174, and thus divides liner 108 into fresh food compartment 102 and freezer compartment 104.

[0026] Once liner 108 is positioned within case 106, and upper mullion strip 120 is secured to case front faces 164, 166, over mullion 182 and bottom mullion 112 is installed. Bottom mullion 112 is secured to shell outer faces 164, 166 and, as set forth more fully below, facilitates attachment of case bottom panel 156 and front rail 114 (shown in Figure 1) with simple press fit engagement after liner 108 is positioned within case 106. After case rear panel 158 is attached to case shell 150, a known resin foam insulation medium (not shown in Figure 2) is then interposed between case shell 150 and inner liner 108, between case bottom panel 156 and also between liner bottom wall 178 and case rear panel 152. The resin foam insulation medium in one embodiment is a polyurethane composition in liquid/gas form that expands in the space between liner 108 and case 106 and is solidified by curing according to known techniques to a solid foam that adheres to case 106 and liner 108 to form a structurally rigid yet insulated cabinet 100.

[0027] Figure 3 is a cross sectional view bottom mullion 112 that facilitates attachment of case bottom panel 156 (shown in Figure 2) after liner 108 (shown in Figure 2) has been installed into case 106 (shown in Figure 2), and also that substantially prevents foam leaks during foaming processes in fabrication of cabinet 100 (shown in Figure 2).

[0028]

Bottom mullion 112 includes a front face 200 extending across a bottom portion of cabinet 106 (as shown in Figure 1), a first retainer portion 202 extending opposite and generally parallel to front face 200, a guide portion 204 extending downwardly and obliquely away from liner retainer portion 202, and a second retainer portion 206 extending downward from guide portion 204 and extending substantially parallel to bottom mullion front face 200 and first retainer portion 202. Collectively, first retainer portion 202, guide portion 204 and second retainer portion 206 form a front rail channel 208 for receiving front rail 114 (shown in Figure 1) with press fit engagement. Guide portion 204 facilitates hand insertion of front rail 114 without tools by guiding front rail 114 into a proper position as front rail 114 is inserted into front rail channel, thereby

eliminating precise relative positioning of front rail 114 and bottom mullion 112 that may otherwise require fixtures or time consuming manual dexterity and assembly.

[0029] Bottom mullion 112 further includes a substantially flat liner base portion 210 extending from and substantially perpendicular to second retainer portion 206. A third retainer portion 212 extends upwardly from and substantially perpendicular to liner base portion 210 and includes an upwardly and outwardly extending flare portion 214 at an upper end thereof that extends away from guide portion 204. Bottom mullion 112 is folded back upon itself to form a reinforcing section 216 adjacent flare portion 214 and third retainer portion 212. Collectively, first retainer portion 202, guide portion 204, second retainer portion 206, liner base portion 210, and third retainer portion 212 form a liner channel 218 that receives liner 108 (shown in Figures 1 and 2) with press-fit engagement. Guide portion 204 facilitates hand installation of bottom mullion 112 to liner 108 without tools by guiding liner flange 180 (shown in Figure 2) into a proper position as liner flange 180 is received into liner channel 218, thereby eliminating precise relative positioning of bottom mullion 112 relative to liner 108 that may otherwise require fixtures or time consuming manual dexterity and assembly.

[0030] In addition, liner channel 218 and front rail channel 208 extend from opposite sides of bottom mullion 112 such that one of them may be accessed from above, and the other from below as refrigerator cabinet 102 (shown in Figures 1 and 2) is assembled.

[0031] A substantially flat bottom panel engagement portion 220 extends from reinforcing section 216 and is substantially aligned with liner base portion 210. Engagement portion 220 facilitates press fit engagement and attachment of bottom panel 156 to bottom mullion 112 once bottom mullion 112 is attached to case 106 (shown in Figures 1 and 2).

[0032] While the illustrated shaped of bottom mullion 112 has been found particularly useful with certain constructions of refrigerator liners, front rails, and case bottom panels, it is anticipated that the shape of bottom mullion 112 could be modified in alternative embodiment to form channels 208, 218 for simple and direct hand insertion to a variety of refrigerator front rails and liners.

[0033]

Figure 4 is a partial cross sectional view of casing bottom panel 156 *including* a forward end 230, an upper outer surface 232 and a lower outer surface 234 extending

opposite one another. A fastening projection 236 extends from lower surface 234 and includes an extended support portion 238 depending from and extending substantially parallel to lower surface 234 but in a spaced apart relationship to panel lower surface 234. A rounded tongue 240 extends from a distal end of support portion 238 and is also positioned in a spaced apart relationship to panel lower surface 234. Tongue 240 is spaced from panel lower surface 234 so as to create an interference fit with bottom mullion engagement portion 220 (shown in Figure 3). Support portion 238 is at least somewhat resilient in an exemplary embodiment such that fastening projection 236 is deflected when bottom mullion engagement portion 220 is received between tongue 240 and case bottom panel lower surface 234. Deflection of resilient support portion 238 produces a biasing force to hold tongue 140 to bottom mullion 112. As such, fastening projection 236 is essentially a clip attached to bottom panel 156 for simple hand insertion to bottom mullion engagement surface 220 (shown in Figure 3) without tools and expensive fixtures for automated equipment. Thus, fastening projection 236 securely retains case bottom panel 156 to bottom mullion 112 (shown in Figures 1-3) with press fit engagement.

[0034] In one embodiment, fastening projection 236 is fabricated from galvanized steel and attached to case bottom panel 156 according to known techniques. It is contemplated, however, that fastening projection 236 could be fabricated from other suitable materials and furthermore may be integrally formed into bottom panel 156 as desired. It is further contemplated that other configurations and adaptations of fastening projection 236 may be employed to achieve the instant advantages of the present invention and without departing from the scope of the present claims.

[0035] Figure 5 is a schematic cross sectional view of a portion of a complete refrigerator cabinet 102 and illustrates bottom mullion 112 interfacing with inner liner 108 and case bottom panel 156. A lower portion of liner flange 180 is contoured into a shape substantially complimentary to a forward portion (to the left in Figure 5) of bottom mullion liner channel 218. Flange 180 is therefore received in bottom mullion 218 with a secure interference fit with simple press fit engagement after liner 108 has been installed into outer case 106. Bottom mullion engagement portion 220 is received in bottom panel fastening projection 236 in an overlapping arrangement with bottom panel *forward end* 230, also with press-fit engagement, and refrigerator from rail 114 includes a contoured